Surface reactions followed by in-situ x-ray photoelectron spectroscopy

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Using high-resolution x-ray photoelectron spectroscopy in combination with a supersonic molecular beam, surface reactions such as adsorption, dehydrogenation or oxidation can be studied in situ in a time-dependent way. In an overview, examples of applications of such synchrotron radiation research to simple systems on flat and stepped metal single crystal surfaces (Pt and Ni) will be presented.